







Annotation - 2003 Salmon Decision Process

- 1 - Mill, Deer and Butte creeks are the most important populations of spring Chinook today (DFG. June 1998. Report to the Fish and Game Commission: A Status Review of the Spring-run Chinook Salmon in the Sacramento River Drainage. Candidate Species Status Report 98-01). DFG operates rotary screw traps near the mouths of these three tributaries to monitor the emigration of spring run yearlings, and later, spring run and fall run fry.
- 2 - Juvenile Chinook in the spring Chinook tributaries less than 70 mm between October and April are fall run or spring run fry or pre-smolts (Figure 1) and not the focus of the Salmon Decision Process actions.
- 3 - Juvenile Chinook in the spring run tributaries greater than 70 mm between October and April are spring run yearlings (Figure 1) and the focus of the Salmon Decision Process actions.
- 4 - Yearling spring run are difficult to trap, due to their low numbers and strong swimming ability, therefore a significant increase in flow is a surrogate for trapping yearling spring run. The first significant flow in October is associated with the beginning of emigration (Figures 2 - 4).
- 5 - Yearling spring run at the mouths of the spring run tributaries are in the Sacramento River and are susceptible to Delta mortality factors associated with the Delta Cross Channel (DCC) and SWP/CVP export operations.
- 6 - The "First Alert" is the early warning criteria for closing the DCC..
- 7 - Wilkins Slough is the flow gage near Knights Landing, and about 35 miles upstream of the Delta. A significant flow increase at Wilkins Slough is associated with juvenile emigration past Knights Landing (Figure 5).
- 8 - The "Second Alert" is the warning criteria for closing the DCC. The First and Second alerts are important warning criteria because information and data dissemination, and agency coordination for an action can take several days.
- 9 - Catches Indexes at Knights Landing and/or Sacramento are the criteria upon which the first action is based; closing the Delta Cross Channel Gates (DCC) (Figures 6 and 7). The raw catches are standardized to one day of effort, but do not include catch efficiency. Depending on the catch magnitude, there are several options for closing the DCC, ranging from not closing them, and continuing to monitor catch at KL and/or Sac, to closing them until the catch index decreases to 5 fish per day.

- 10 - Closing the DCC for fish protection can adversely impact Delta salinity from November through January. Without Sacramento River freshwater flowing through the DCC and into the central Delta to the bay, saline ocean water can intrude into the central and southern Delta. Water project operators developed an objective set of water salinity criteria that indicate when the Delta becomes susceptible to salinity intrusion if the DCC is closed and exports are maintained.
- 11 - Fish and water salinity needs are frequently mutually exclusive, with respect to the DCC position, from November through January. Under the situation, if the Data Assessment Team (DAT) and Operations and Fish Forum (OFF) can't resolve the contradiction, they elevate it to the Water Operations Management Team (WOMT).
- 12 - The KL and/or Sac catch index of > 10 from November through February, and > 15 from March through April indicates the "Third Alert". A significant number of juvenile Chinook are in the Delta and potentially exposed to the south Delta exports in the following weeks.
- 13 - FWS conducts a juvenile Chinook Delta survival experiment each year in December and January. The goal is to try to determine the relationship between survival, exports and flow. The objective is 10 consecutive days of consistent environmental parameters, exports and inflow. The criteria to achieve the objective is a KL and/or Sac catch index > 10 , and projected Sacramento River flow increased by 20%.
- 14 - Juvenile Chinook loss at the exports is the only export reduction criteria. The two loss criteria are based on non-clipped Chinook loss density (Figure 8), and Coleman late fall hatchery Chinook cumulative loss. Non-clipped Chinook loss density and hatchery Chinook cumulative loss are the "Fourth and Fifth alerts".
- 15 - Fish Management Agencies (MA) determine whether there is sufficient EWA assets to reduce exports. If there are insufficient EWA assets, the MAs elevate the issue to WOMT for resolution.
- 16 - If EWA assets are sufficient, the MAs reduce exports for a number of days and resume monitoring loss.